

REMARKS

Claims 24-35 are presented for examination. These claims were rejected in the January 26, 2001 office action as being anticipated by *Krech* (U.S. Patent No. 6,184,902). Applicants respectfully request reconsideration of those rejections in light of the following remarks.

Applicants' independent claim 24, for example, recites a lighting system for graphics processing. This system varies in several ways from the system disclosed in *Krech*. For example, claim 24 recites, among other limitations:

at least one input buffer adapted for being coupled to a transform system for receiving vertex data therefrom.

Krech does not disclose such an input buffer. The input buffer disclosed by *Krech* is shown in Figure 3 as reference number 77, and it receives input from the CPU (as evidenced by reference number 18) rather than from a transform system as required by claim 24. Accordingly, the *Krech* input buffer is not and cannot be "adapted for being coupled to a transform system for receiving vertex data therefrom." Claim 24 is thus distinguishable over *Krech*.

Although the claims dependent from claim 24 are allowable because they incorporate the material of claim 24, several of these dependent claims also recite independently allowable subject matter. For example, claim 25 recites:

the multiplication logic unit has a feedback loop coupled to an input thereof.

This is an architectural limitation that is not taught or suggested by *Krech*. Although *Krech* may teach the vertex looping routine described in the office action, this vertex looping routine is not equivalent to the architectural limitation of claim 25.

The architecture of the *Krech* device is illustrated in figures 3-5, and the multiplication unit is labeled as reference number 55. None of these figures show any type of feedback loop coupled to the input of the multiplication unit 55. And nothing in the written description discloses a feedback loop coupled to the input of the multiplication unit 55. Accordingly, *Krech* cannot teach or suggest claim 25, which requires a feedback.

Claim 26 is also allowable for independent reasons. It recites:

the lighting logic unit is coupled to the multiplication logic unit via a conversion module adapted for converting scalar vertex data to vector vertex data.

The office action points to figure 5 as support for rejecting this claim. But figure 5 does not teach or suggest the use of a conversion module as recited in applicants' claim.

Krech's figure 5, for example, illustrates a stack of processing elements (51) that includes a multiplier. This figure does not illustrate any conversion module adapted to convert scalar vertex data to vector vertex data. Similarly, the text supporting figure 5 does not describe any conversion module for converting scalar vertex data to vector vertex data. Accordingly, *Krech* cannot teach or suggest claim 26.

Claims 28 and 29 also recite independently allowable subject matter. These claims recite specific architectures for the multiplication logic unit and the arithmetic logic unit, respectively. Claim 28, for example, recites:

the multiplication logic unit includes three multipliers coupled in parallel.

And claim 29 recites:

the arithmetic logic unit includes three adders coupled in series and parallel.

Krech does not disclose either of these architectures, and the office action does not point to any material that discusses the architecture. The cited material at column 5, lines 14-55, for example, discusses the geometry accelerator (23) but does not disclose any specific construction of a multiplier or an arithmetic logic unit. Similarly, the material at column 14, lines 13-48 discusses the operation of an arithmetic logic unit (55) but does not disclose any structure for that unit. Accordingly, nothing in *Krech* appears to teach or disclose a “multiplication logic unit [that] includes three multipliers coupled in parallel,” or an “arithmetic logic unit [that] includes three adders coupled in series and parallel.” Claims 28 and 29 are thus allowable over *Krech*.

Regarding claims 30-35, applicants submit that these claims are also allowable over *Krech* for some of the reasons discussed above. Accordingly, applicants request that the rejections be withdrawn against these claims.

CONCLUSION

Applicants respectfully submit that the claims as presented are distinguishable over the applied references. Because no other objections or rejections are outstanding, Applicants request an indication of allowability.

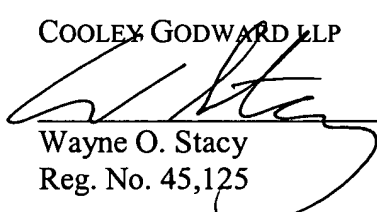
The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 03-3117.

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